IN THE CLAIMS:

Please amend the claims as follows:

1. (Previously presented) A gas delivery assembly, comprising:

a covering member comprising an expanding channel at a central portion of the covering member and comprising a tapered bottom surface extending from the expanding channel to a peripheral portion of the covering member; and

one or more gas conduits coupled to the expanding channel, wherein the one or more gas conduits are positioned at an angle from a center of the expanding channel.

2. (Original) The gas delivery assembly of claim 1, wherein the one or more gas conduits are disposed normal to a longitudinal axis of the expanding channel.

3. (Original) The gas delivery assembly of claim 1, wherein the one or more gas conduits are disposed at an angle to a longitudinal axis of the expanding channel.

4. (Original) The gas delivery assembly of claim 3, wherein the one or more gas conduits are angled downwardly.

5. (Original) The gas delivery assembly of claim 3, wherein the one or more gas conduits are angled upwardly.

6. (Original) The gas delivery assembly of claim 1, wherein the one or more gas conduits are disposed along the length of the expanding channel.

7. (Original) The gas delivery assembly of claim 1, wherein the one or more gas conduits are disposed at the same length around the expanding channel.

8. (Original) The gas delivery assembly of claim 7, wherein the one or more gas conduits are equally spaced out around a perimeter of the expanding channel.

9. (Original) The gas delivery assembly of claim 7, wherein the one or more gas conduits are disposed at an upper portion of the expanding channel.

10. (Original) The gas delivery assembly of claim 1, wherein the one or more gas conduits are positioned toward the same circular direction.

11. (Original) The gas delivery assembly of claim 1, wherein the expanding channel comprises a tapered surface extending from the central portion of the covering member.

12. (Currently amended) The gas delivery assembly of claim 11, wherein the tapered surface of the expanding channel comprises a surface selected from the group consisting of a straight surface, a concave surface, a convex surface, ~~or~~ and combinations thereof.

13. (Original) The gas delivery assembly of claim 11, wherein the expanding channel is shaped as a truncated cone.

14. (Original) The gas delivery assembly of claim 1, wherein the expanding channel comprises an upper portion and a lower portion, the upper portion having a smaller inner diameter than the lower portion.

15. (Cancelled)

16. (Currently amended) The gas delivery assembly of claim 15, wherein the tapered bottom surface of the covering member comprises a surface selected from the group consisting of a straight surface, a concave surface, a convex surface, ~~or~~ and combinations thereof.

17. (Original) The gas delivery assembly of claim 15, wherein the tapered bottom surface of the covering member is shaped as a funnel.

18. (Original) The gas delivery assembly of claim 1, wherein the bottom surface is substantially flat.

19. (Original) The gas delivery assembly of claim 1, further comprising one or more gas sources coupled to each gas conduit.

20. (Original) The gas delivery assembly of claim 19, wherein a common purge gas source is coupled to each gas conduit.

21. (Original) The gas delivery assembly of claim 19, wherein separate reactant gas sources are coupled to each gas conduit.

22. (Original) The gas delivery assembly of claim 19, wherein a common purge gas source is coupled to each gas conduit and wherein separate reactant gas sources are coupled to each gas conduit.

23. (Previously presented) A chamber, comprising:

a substrate support having a substrate receiving surface;

a chamber lid comprising an expanding channel at a central portion of the chamber lid and a tapered bottom surface extending from the expanding channel to a peripheral portion of the chamber lid, the tapered bottom surface shaped and sized to substantially cover the substrate receiving surface;

one or more gas conduits coupled to the expanding channel, wherein the one or more gas conduits are positioned at an angle from a center of the expanding channel and wherein the one or more gas conduits comprises one or more valves; and

one or more gas sources coupled to each valve.

24. (Currently amended) The chamber of claim 23, wherein the tapered bottom surface of the chamber lid comprises a surface selected from the group consisting of a straight surface, a concave surface, a convex surface, ~~or~~ and combinations thereof.

25. (Original) The chamber of claim 23, wherein the tapered bottom surface of the chamber lid is shaped as a funnel.

26. (Original) The chamber of claim 23, further comprising a choke disposed on the chamber lid adjacent a perimeter of the tapered bottom surface.

27. (Original) The chamber of claim 26, wherein the choke has an inner diameter at least as long as a diameter of the substrate receiving surface.

28. (Cancelled)

29. (Previously presented) The chamber of claim 23, wherein the one or more gas conduits couple the one or more valves to the expanding channel.

30. (Previously presented) The chamber of claim 23, wherein a plurality of flow sections are between the tapered bottom surface of the chamber lid and the substrate receiving surface define, wherein a ratio of a maximum area of the flow sections to a minimum area of the flow sections is less than about 2.0.

31. (Original) The chamber of claim 30, wherein the ratio of the maximum area of the flow sections to the minimum area of the flow sections is less than about 1.5.

32. (Original) The chamber of claim 30, wherein the ratio of the maximum area of the flow sections to the minimum area of the flow sections is less than about 1.3.

33. (Original) The chamber of claim 30, wherein the ratio of the maximum area of the flow sections to the minimum area of the flow sections is about 1.0.

34. (Currently amended) A chamber, comprising:

a substrate support having a substrate receiving surface;

a chamber lid comprising a an expanding channel at a central portion of the chamber lid and comprising a tapered bottom surface extending from the expanding channel to a peripheral portion of the chamber lid, the tapered bottom surface shaped and sized to substantially cover the substrate receiving surface;

one or more gas conduits coupled to the expanding channel, wherein the one or more gas conduits are positioned at an angle from a center of the expanding channel and wherein the one or more gas conduits comprises one or more valves; and

one or more gas sources coupled to each valve;

wherein a reaction zone is defined between the chamber lid and the substrate receiving surface~~, the reaction zone comprising a small volume~~.

35. (Currently amended) The chamber of claim 34, wherein the ~~small~~ volume of the reaction zone comprises about 1,000 cm^3 or less and wherein the substrate receiving surface is adapted to receive a 200 mm diameter substrate.

36. (Currently amended) The chamber of claim 34, wherein the ~~small~~ volume of the reaction zone comprises about 500 cm^3 or less and wherein the substrate receiving surface is adapted to receive a 200 mm diameter substrate.

37. (Currently amended) The chamber of claim 34, wherein the ~~small~~ volume of the reaction zone comprises about 200 cm^3 or less and wherein the substrate receiving surface is adapted to receive a 200 mm diameter substrate.

38. (Currently amended) The chamber of claim 34, wherein the ~~small~~ volume of the reaction zone comprises about 3,000 cm^3 or less and wherein the substrate receiving surface is adapted to receive a 300 mm diameter substrate.

39. (Currently amended) The chamber of claim 34, wherein the ~~small~~ volume of the reaction zone comprises about 1,500 cm^3 or less and wherein the substrate receiving surface is adapted to receive a 300 mm diameter substrate.

40. (Currently amended) The chamber of claim 34, wherein the ~~small~~ volume of the reaction zone comprises about 600 cm^3 or less and wherein the substrate receiving surface is adapted to receive a 300 mm diameter substrate.

41. (Original) The chamber of claim 34, further comprising a choke disposed on the chamber lid adjacent a perimeter of the bottom surface.

42. (Original) The chamber of claim 41, wherein the choke has an inner diameter at least as long as a diameter of the substrate receiving surface.

43. (Cancelled)

44. (Previously presented) The chamber of claim 34, wherein the one or more gas conduits couple the one or more valves to the passageway.

45. (Previously presented) A chamber, comprising:

a substrate support having a substrate receiving surface;

a chamber lid comprising a tapered expanding channel extending from a central portion of the chamber lid and a tapered bottom surface extending from the expanding channel to a peripheral portion of the chamber lid, the tapered bottom surface shaped and sized to substantially cover the substrate receiving surface;

one or more gas conduits coupled to the expanding channel, wherein the one or more gas conduits are positioned at an angle from a center of the expanding channel and wherein the one or more gas conduits comprises one or more valves; and

one or more gas sources coupled to each valve.

46. (Previously presented) The chamber of claim 45, wherein the one or more gas conduits couple the one or more valves to the expanding channel, and wherein the one or more gas conduits have an inner diameter which increases toward the expanding channel.

47. (Original) The chamber of claim 46, wherein the one or more gas conduits have a tapered inner diameter which increases toward the expanding channel.

48. (Original) The chamber of claim 46, wherein each gas conduit comprises a plurality of sections have a progressively larger inner diameter toward the expanding channel.

49. (Currently amended) The chamber of claim 45, wherein the tapered expanding channel comprises a surface selected from the group consisting of a straight surface, a concave surface, a convex surface, ~~or~~ and combinations thereof.

50. (Original) The chamber of claim 45, wherein the tapered expanding channel is shaped as a truncated cone.

51. (Original) The chamber of claim 45, wherein the tapered expanding channel comprises an upper portion and a lower portion, the upper portion having a smaller inner diameter than the lower portion.

52. (Cancelled)

53. (Previously presented) The chamber of claim 45, wherein the one or more gas conduits are disposed normal to a longitudinal axis of the expanding channel.

54. (Previously presented) The chamber of claim 45, wherein the one or more gas conduits are disposed at an angle to a longitudinal axis of the expanding channel.

55. (Original) The chamber of claim 54, wherein the one or more gas conduits are angled downwardly.

56. (Original) The chamber of claim 54, wherein the one or more gas conduits are angled upwardly.

57. (Previously presented) The chamber of claim 45, wherein the one or more gas conduits are disposed along the length of the expanding channel.

58. (Original) The chamber of claim 53, wherein the one or more gas conduits are disposed at the same length around the expanding channel.

59. (Original) The chamber of claim 58, wherein the one or more gas conduits are equally spaced out around a perimeter the expanding channel.

60. (Original) The chamber of claim 58, wherein the one or more gas conduits are disposed at an upper portion of the expanding channel.

61. (Previously presented) The chamber of claim 45, wherein the one or more gas conduits are positioned toward same circular direction.

62. (Previously presented) The chamber of claim 45, wherein the one or more gas conduits are positioned at an angle from a center of the expanding channel.

63. (Original) A chamber, comprising:

a substrate support having a substrate receiving surface;

a chamber lid comprising an expanding channel extending from a central portion of the chamber lid and comprising a tapered bottom surface extending from the expanding channel to a peripheral portion of the chamber lid;

one or more gas conduits disposed around an upper portion of the expanding channel, wherein the one or more gas conduits are disposed at an angle from a center of the expanding channel; and

a choke disposed on the chamber lid adjacent a perimeter of the tapered bottom surface.

64. (Original) The chamber of claim 63, wherein the one or more gas conduits are disposed normal to a longitudinal axis of the expanding channel.

65. (Original) The chamber of claim 63, wherein the one or more gas conduits are disposed at an angle to a longitudinal axis of the expanding channel.

66. (Original) The chamber of claim 65, wherein the one or more gas conduits are angled downwardly.

67. (Original) The chamber of claim 65, wherein the one or more gas conduits are angled upwardly.

68. (Original) The chamber of claim 63, wherein one or more valves are coupled to each gas conduit.

69. (Original) The chamber of claim 68, wherein the one or more valves are selected from the group consisting of pneumatically actuated valves and electrically actuated valves.

70. (Original) The chamber of claim 68, wherein the one or more valves are zero dead volume valves.

71. (Original) The chamber of claim 68, further comprising one or more gas sources coupled to each valve.

72. (Original) The chamber of claim 68, wherein a common purge gas source is coupled to each valve.

73. (Original) The chamber of claim 68, wherein separate reactant gas sources are coupled to each valve.

74. (Original) The chamber of claim 68, wherein a common purge gas source is coupled to each valve and wherein separate reactant gas sources are coupled to each valve.

Claims 75-105. (Cancelled)

106. (Previously presented) A gas delivery assembly, comprising:

a covering member comprising an expanding channel at a central portion of the covering member and comprising a tapered bottom surface extending from the expanding channel to a peripheral portion of the covering member; and

one or more gas conduits coupled to the expanding channel.

107. (Previously presented) The gas delivery assembly of claim 106, wherein the covering member is a chamber lid.

108. (Previously presented) The gas delivery assembly of claim 106, wherein the one or more gas conduits are disposed at an angle between 0 degrees and 90 degrees from a center of the expanding channel.

109. (Previously presented) The gas delivery assembly of claim 106, wherein the expanding channel is shaped as a truncated cone.

110. (Previously presented) The gas delivery assembly of claim 106, wherein the expanding channel comprises an upper portion and a lower portion, the upper portion having a smaller inner diameter than the lower portion.

111. (Currently amended) The gas delivery assembly of claim 106, wherein the tapered bottom surface of the covering member comprises a surface selected from the group consisting of a straight surface, a concave surface, a convex surface, ~~or~~ and combinations thereof.

112. (Previously presented) The gas delivery assembly of claim 106, wherein the tapered bottom surface of the covering member is shaped as a funnel.

113. (Previously presented) The gas delivery assembly of claim 106, wherein the bottom surface is substantially flat.

114. (Previously presented) The gas delivery assembly of claim 106, further comprising one or more gas sources coupled to each gas conduit.

115. (Previously presented) The gas delivery assembly of claim 106, wherein a common purge gas source is coupled to each gas conduit.

116. (Previously presented) The gas delivery assembly of claim 106, wherein separate reactant gas sources are coupled to each gas conduit.

117. (Previously presented) The gas delivery assembly of claim 106, wherein a common purge gas source is coupled to each gas conduit and wherein separate reactant gas sources are coupled to each gas conduit.

118. (Previously presented) A chamber, comprising:
a substrate support having a substrate receiving surface; and
a gas delivery assembly, comprising:
a covering member comprising an expanding channel extending from a central portion of the covering member and comprising a tapered bottom surface

extending from the expanding channel to a peripheral portion of the covering member;

one or more gas conduits disposed around an upper portion of the expanding channel; and

a choke disposed on the chamber lid adjacent a perimeter of the tapered bottom surface.

119. (Previously presented) The gas delivery assembly of claim 118, wherein the covering member is a chamber lid.

120. (Previously presented) The gas delivery assembly of claim 118, wherein the one or more gas conduits are disposed at an angle from a center of the expanding channel.

121. (Previously presented) The gas delivery assembly of claim 118, wherein the expanding channel is shaped as a truncated cone.

122. (Previously presented) The gas delivery assembly of claim 118, wherein the expanding channel comprises an upper portion and a lower portion, the upper portion having a smaller inner diameter than the lower portion.

123. (Currently amended) The gas delivery assembly of claim 118, wherein the tapered bottom surface of the covering member comprises a surface selected from the group consisting of a straight surface, a concave surface, a convex surface, ~~or~~ and combinations thereof.

124. (Previously presented) The gas delivery assembly of claim 118, wherein the tapered bottom surface of the covering member is shaped as a funnel.

125. (Previously presented) The gas delivery assembly of claim 118, wherein the bottom surface is substantially flat.

126. (Previously presented) The gas delivery assembly of claim 118, further comprising one or more gas sources coupled to each gas conduit.

127. (Previously presented) The gas delivery assembly of claim 118, wherein a common purge gas source is coupled to each gas conduit.

128. (Previously presented) The gas delivery assembly of claim 118, wherein separate reactant gas sources are coupled to each gas conduit.

129. (Previously presented) The gas delivery assembly of claim 118, wherein a common purge gas source is coupled to each gas conduit and wherein separate reactant gas sources are coupled to each gas conduit.